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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/755,499	01/04/2001	Joseph A. Bailey	5500-66800	7413

7590 02/02/2005

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EXAMINER	
CLEARY, THOMAS J	
ART UNIT	**PAPER NUMBER**
2111	

DATE MAILED: 02/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/755,499	BAILEY, JOSEPH A.	
	Examin r	Art Unit	
	Thomas J. Cleary	2111	

-- The MAILING DATE of this communication appears on the cov r sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 November 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-9,11-17 and 19-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-9,11-17 and 19-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 May 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 3-9, 11-17, and 19-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In Claims 1, 9, and 17, Applicant has claimed that the packets in the plurality of upstream buffers are reordered if the order of transmission is not correct. Applicant has also claimed that the packets are transmitted based on the order of receipt within the plurality of upstream buffers. It is unclear how the packets can be both reordered after receipt within the plurality of upstream buffers and transmitted based on the order of receipt. By reordering the packets in the buffer, they will no longer be transmitted based on the order of receipt.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 3, 7, 8, 9, 11, 15, 16, 17, 19, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Number 5,333,267 to Sweazey ("Sweazey") and US Patent Number 6,011,798 to McAlpine ("McAlpine").

5. In reference to Claim 1, Sweazey teaches an apparatus comprising: a plurality of upstream buffers each configured to store a plurality of upstream packets (See Figure 1 Number 39), wherein each of said plurality of upstream packets contains an associated identifier indicative of a source of each of said plurality of upstream packets (See Column 6 Lines 41-57); and a router coupled to each of said plurality of upstream buffers and configured to receive said plurality of packets, and to route each of said plurality of packets to a given one of said upstream buffers, depending upon the associated identifier(See Figure 1 Number 37 and Column 7 Lines 7-18), wherein a given buffer of said plurality of upstream buffers stores only packets having a same source (See Column 7 Lines 15-22); a transmitter unit coupled to said plurality of upstream reorder logic circuits and configured to transmit one packet of said plurality of upstream packets stored within said plurality of upstream buffers dependent upon an order of receipt within said plurality of upstream buffers (See Figure 1 Number 41 and Column 7 Lines 45-52). Sweazey does not teach a plurality of upstream reorder logic circuits, wherein each one of said plurality of upstream reorder logic circuits is coupled to a corresponding one of said plurality of upstream buffers and is configured to determine a correct order of transmitting each of said packets stored in said

corresponding one of said plurality of upstream buffers based on a set of predetermined criteria, wherein each of said plurality of upstream reorder logic circuits is further configured to reorder given ones of said packets stored in said corresponding one of said plurality of upstream buffers in response to determining that said order of transmitting is not correct. McAlpine teaches a circuit which determines the correct order of transmission for packets in a buffer based on a set of predetermined criteria and reorders said packets if the order of transmission is not correct (See Column 5 Lines 11-17).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the device of Sweazey with the packet rearrangement of McAlpine, resulting in the invention of Claim 1, in order to predetermine, using an algorithm, the correct next packet to be sent for transmission (See Column 13 Lines 47-50 of McAlpine).

6. Claims 9 and 17 are substantially equivalent to Claim 1 and are rejected under similar rationale as that applied to Claim 1 above.

7. In reference to Claim 3, Sweazey and McAlpine teach the limitations as in Claim 1 above. Sweazey further teaches a downstream buffer configured to store a plurality of downstream packets wherein each of said plurality of downstream packets contains an identifier with a corresponding value (See Figure 1 Number 45 and Column 8 Lines 8-13). Sweazey does not teach a downstream reorder logic circuit coupled to said

downstream buffer and configured to determine an order of transmitting each of said plurality of downstream packets based on said set of predetermined criteria. McAlpine teaches a circuit which determines the correct order of transmission for packets in a buffer based on a set of predetermined criteria and reorders said packets based on said predetermined criteria (See Column 5 Lines 11-17).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the device of Sweazey with the packet rearrangement of McAlpine, resulting in the invention of Claim 3, in order to predetermine, using an algorithm, the correct next packet to be sent for transmission (See Column 13 Lines 47-50 of McAlpine).

8. Claims 11 and 19 are substantially equivalent to Claim 3 and are rejected under similar rationale as that applied to Claim 3 above.

9. In reference to Claim 7, Sweazey and McAlpine teach the limitations as in Claim 1 above. Sweazey further teaches that the router is further configured to route upstream packets having associated identifiers with corresponding values to the same upstream buffer of said plurality of upstream buffers (See Column 7 Lines 7-22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the device of Sweazey with the packet rearrangement of McAlpine, resulting in the invention of Claim 7, in order to predetermine, using an

algorithm, the correct next packet to be sent for transmission (See Column 13 Lines 47-50 of McAlpine).

10. Claims 15 and 23 are substantially equivalent to Claim 7 and are rejected under similar rationale as that applied to Claim 8 above.

11. In reference to Claim 8, Sweazey and McAlpine teach the limitations as in Claim 1 above. Sweazey further teaches that the router is further configured to route upstream packets having associated identifiers with different values to different upstream buffers of said plurality of upstream buffers (See Column 7 Lines 7-22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to construct the device of Sweazey with the packet rearrangement of McAlpine, resulting in the invention of Claim 8, in order to predetermine, using an algorithm, the correct next packet to be sent for transmission (See Column 13 Lines 47-50 of McAlpine).

12. Claims 16 and 24 are substantially equivalent to Claim 8 and are rejected under similar rationale as that applied to Claim 8 above.

13. Claims 4, 12, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sweazey and McAlpine as applied to Claims 3, 11, and 19 above, and further in

view of Japanese Patent Number JP 10341240 A to Taniguchi ("Taniguchi") and US Patent Number 4,677,612 to Olson et al. ("Olson").

14. In reference to Claim 4, Sweazey and McAlpine teach the limitations as applied to Claim 3 above. Sweazey and McAlpine do not teach that said predetermined criteria include: arrival times of each of said plurality of upstream packets and each of said plurality of downstream packets; and transaction types of each of said plurality of upstream packets and each of said plurality of downstream packets. McAlpine teaches that any desired prioritization algorithm can be employed (See Column 5 Lines 15-17). Taniguchi teaches a device that numbers input packets according to arrival time and outputs the packets according to said number (See Abstract). Olson teaches a system wherein a station on a communication line transmits a packet based on the type of packet (See Column 2 Lines 21-26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the device of Sweazey and McAlpine with the transmission of packets based on arrival time of Taniguchi and the transmission of packets based on packet type of Olson, resulting in the invention of Claim 4, in order to provide a device that provides outputs of packets in the arrival time order of the packets (See Abstract of Taniguchi) and thus serve as a FIFO device which can allow communications between a sender and a receiver that are not synchronized; to ensure a uniform distribution of traffic during the traffic cycle (See Column 2 Lines 26-27 of Olson); and to reduce overhead in the communications system (See Column 2 Lines

38-41 of Olson); and because McAlpine teaches that any desired prioritization algorithm can be employed (See Column 5 Lines 15-17 of McAlpine).

15. Claims 12 and 20 are substantially equivalent to Claim 4 and are rejected under similar rationale as that applied to Claim 4 above.

16. Claims 5, 13, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sweazey and McAlpine as applied to Claims 1, 9, and 17 above, and further in view of US Patent Number 6,170,025 to Drottar et al. ("Drottar").

17. In reference to Claim 5, Sweazey and McAlpine teach the limitations as applied to Claim 1 above. Sweazey and McAlpine do not teach a local node bridge circuit configured to translate a peripheral bus transaction into an additional upstream packet and to forward said additional upstream packet upstream. Drottar teaches a bridge circuit that translates data from a peripheral device into network packets (See Figure 3 Number 320 and Column 5 Lines 8-28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the device of Sweazey and McAlpine with the bridge circuit of Drottar, resulting in the invention of Claim 5, in order to allow peripheral devices that do not use packet based communications to communicate over a packet network (See Column 4 Lines 42-55 and Column 5 Lines 11-16 of Drottar) and thus

allow I/O systems to be remotely located from the computers (See Column 4 Lines 19-22 of Drottar).

18. Claims 13 and 21 are substantially equivalent to Claim 5 and are rejected under similar rationale as that applied to Claim 5 above.

19. Claims 6, 14, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sweazey, McAlpine, and Drottar as applied to Claims 5, 13, and 21 above, and further in view of US Patent Number 6,108,345 to Zhang ("Zhang").

20. In reference to Claim 6, Sweazey, McAlpine, and Drottar teach the limitations as applied to Claim 5 above. Sweazey, McAlpine, and Drottar do not teach a dedicated node stream buffer coupled to said local node bridge circuit and configured to store said additional upstream packet. Zhang teaches a buffer coupled to a bridge for storing a packet to be transmitted (See Figure 3 Number 110 and Column 4 Lines 37-38).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the device of Sweazey, McAlpine, and Drottar with the packet buffer coupled to a bridge of Zhang, resulting in the invention of Claim 6, in order to allow the communication lines connected to the bridge to operate at different speeds (See Column 4 Lines 37-38 of Zhang).

21. Claims 14 and 22 are substantially equivalent to Claim 6 and are rejected under similar rationale as that applied to Claim 6 above.

Response to Arguments

22. Applicant's arguments with respect to Claims 1, 3-9, 11-17, and 19-24 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

23. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas J. Cleary whose telephone number is 571-272-3624. The examiner can normally be reached on Monday-Thursday (7-3:30), Alt. Fridays (7-2:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark H. Rinehart can be reached on 571-272-3632. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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